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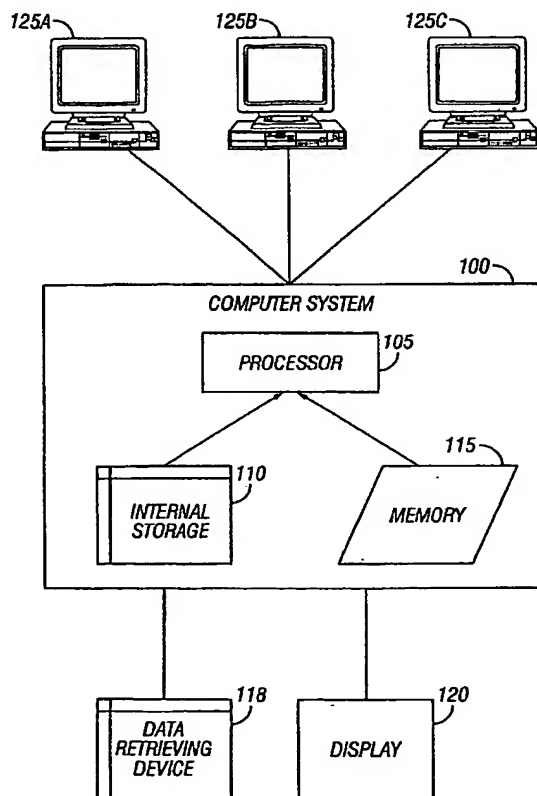
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(54) Title: LACCASES, NUCLEIC ACIDS ENCODING THEM AND METHODS FOR MAKING AND USING THEM



(57) Abstract: The invention provides laccases, polynucleotides encoding these enzymes, the use of such polynucleotides and polypeptides. In one aspect, the invention relates to the enzymatic production of nootkatone by way of the conversion of valencene using proteins having a laccase activity, e.g., a novel laccase of the invention. In one aspect, the invention provides methods of depolymerizing lignin, e.g., in a pulp or paper manufacturing process, using a polypeptide of the invention. In another aspect, the invention provides methods for oxidizing products that can be mediators of laccase-catalyzed oxidation reactions, e.g., 2,2-azinobis-(3-ethylbenzthiazoline-6-sulfonate) (ABTS), 1- hydroxybenzotriazole (HBT), 2,2,6,6-tetramethylpiperidin-1-yloxy (TEMPO), dimethoxyphenol, and the like.



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